Telephone (925) 625-2279

December 12, 2012

Ms. Anne Olson Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Drive #200 Rancho Cordova, CA 95670

SUBJECT:

Comments on Tentative Waste Discharge Requirements for the Ironhouse Wastewater

Treatment and Recycling Facility

Dear Ms. Olson:

Attached are Ironhouse Sanitary District's (ISD) comments on the Tentative Waste Discharge Requirements (Tentative WDRs) for the Ironhouse Wastewater Treatment and Recycling Facility (WWTRF) issued on November 20, 2012. The comments consist of factual corrections and requests for modifications to effluent limitations, provisions, and monitoring and reporting requirements.

The District is particularly concerned with the following aspects of the WDRs:

- 1) Effluent limitation for total nitrogen,
- 2) Mainland groundwater limitations,
- 3) Inclusion of ultraviolet disinfection system specifications and associated monitoring and reporting requirements,
- 4) Total coliform monitoring frequency, and
- 5) Retention of groundwater monitoring wells identified as being abandoned in the WDRs.

ISD's concerns and requested changes to the WDR's are detailed in Attachment A. ISD would like to meet with you and Robin Merod the week of December 16, 2012 to go over our comments, as we would like discuss in person our key concerns. The dates that work best for us next week are anytime December 18, 2012 or December 20, 2012 in the morning Please contact Jenny Skrel at 925-625-2279 or e-mail skrel@isd.us.com to set up a meeting or to discuss any questions you have regarding these comments.

Sincerely,

IRONHOUSE SANITARY DISTRICT

District Engineer

Attachment A – Comments on Tentative WDRs

cc: Robin Merod

Michael Bryan, Robertson-Bryan, Inc.

IRONHOUSE SANITARY DISTRICT COMMENTS ON TENTATIVE WASTE DISCHARGE REQUIREMENTS FOR IRONHOUSE SANITARY DISTRICT IRONHOUSE WASTEWATER TREATMENT AND RECYCLING FACILITY

Submitted December 12, 2012

CONTRA COSTA COUNTY

I. Itemized Comments

The District requests the text modifications identified in the following table be made to the Waste Discharge Requirements, Monitoring and Reporting Program, and Information Sheet. Requested deletions are identified in strikeout text and additions are identified in underline text. Where appropriate, rationale for the requested modification is provided in the table. Additional information is provided in Section II to support the District's requests, as necessary, to explain the District's basis for requesting the modification.

Page Number, Item Number	Edit Needed / Request for Modification						
Waste Discharge Requirements (WDRs)							
p. 1, #4 Order 5-01-237 allows an average daily <u>effluent</u> flow of 2.0 million gallons p (MGD) and a maximum daily <u>effluent</u> flow of 2.5 MGD.							
p. 2, #6	Prior to July 2011, the wastewater treatment plant (WWTP) consisted						
p. 2, #7	The storage ponds have a capacity of approximately 285 350 acre-feet with two thre feet of freeboard						
p. 2, #9	The previous WDRs set an average monthly <u>effluent</u> flow limit of 2.0 MGD						
p. 4, #13	A global replacement is needed here and throughout the remainder of the WDRs to change "WWTP" to "WWTRF" when the new wastewater treatment facility is discussed.						
p.4, #16	Once capacity is available, wastewater from the South Pond						
p. 5, #21 Tertiary disinfected waste wastewater is either stored in the North Pond prior to application to the Jersey Island LAA <u>via the Supply Pump Station</u> or pumped of to the Jersey Island LAA <u>via the WWTRF Effluent Pump Station</u> .							
p. 6, #23	The effluent TDS concentration has also decreased from 2007 levels.						
p. 6, #24	This Order sets an influent flow limit at the design treatment capacity of 4.3 MGD average dry weather flow						

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Page Number, Item Number	Edit Needed / Request for Modification						
p. 6, #26	The previous Order allowed the Discharger to apply biosolids as soil amendment to the LAA fields on the mainland and Jersey Island, and this Order also allows the land application of biosolids.						
p. 6, #27	The sludge is stockpiled on Jersey Island prior to being used for maintaining and reinforcing LAA field berms levees on Jersey Island.						
p. 7, #28	The Discharger <u>plans to has ceased</u> use of the mainland LAA for water recycling. The mainland area is approximately 165 acres and will be used to grow crops with water from natural precipitationThis Order allows certain mainland monitoring wells to be abandoned as requested if desired by the Discharger (see Attachment C).						
p. 7, #29	However, this Order requires to the Discharger						
p. 8, #37	Storm water runoff from the mainland fields is collected in drainage ditches and either pumped to the "I parcel" or to Big Break via the Return Pump Stationserves as a water fowl habitat.						
p.8, after #37	Though overflow from the North Pond is remote due to the new surface water discharge the following paragraph from the existing WDR's (page 3, item 11, slight modification to reference only the North Pond) would like to be retained: "The North Pond has an overflow structure designed to maintain a minimum of two feet of freeboard at all times. In the event of overflow through this structure, effluent would be discharged onto mainland Field A where it could be retained before being returned to the ponds via the mainland tailwater return system."						
p. 9, #39	The Discharger has been working worked to add						
p. 11, #51	The following table summarizes surface water monitoring data collected from Jersey Island-before and after the wastewater treatment upgrades for the period January 2007 through June 2012.						
p. 13, #57	Space needed between item #56 and #57.						
p. 15, #65	the EC concentration has been decreasing at these piezometers.						
p. 15, #66.b	Delete extra period at end of this section.						
p. 19, #76	Delete the "()" in front of the "(f) Soil Amendments" and "(h) Reuse".						
p. 19, #77.a	The anoxic and aeration basins, MBR reactors, North Storage Pond, South Storage Pond, Bethel Island storage ponds and appurtenant structures						
p. 23, Total Nitrogen Limitation	The NPDES permit regulating the surface water discharge of WWTRF effluent contains an average monthly effluent limitations (AMEL) for nitrate+nitrite of 10 mg/L-N and an AMEL for ammonia of 1.1 mg/L-N. Thus, the Tentative WDRs limitation for total nitrogen of 10 mg/L-N is more restrictive than the NPDES permit limitations. The WWTRF effluent has, at times, had a nitrate concentration of 10 mg/L-N and detectable concentrations of ammonia, which would put the District in non-compliance with the Tentative WDRs total nitrogen limitation. Therefore, the District requests the AMEL for total nitrogen be changed from 10 mg/L to 15 mg/L to reflect current plant performance and to be consistent with the NPDES permit.						

Page Number,							
Item Number	Edit Needed / Request for Modification						
p. 23, Total	The District requests the total coliform limitations be modified as follows:						
Coliform Limitations	Prior to discharge to the North Storage Pond, effluent shall not exceed the following limits for total coliform organisms:						
	a. The 7-day-30-day median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed a most probable number (MPN) of 2.2-23 per 100 milliliters. Compliance with this requirement will be determined using data for collected during each calendar week (Sunday through Saturday Monday through Friday).						
	b. The number of total coliform bacteria shall not exceed an MPN of 23 240 per 100 milliliters in more than one sample in any 30 day period.						
	Rationale for these changes is provided following this table in Section II.						
p. 23, Effluent Limitations #2	Compliance with this requirement shall be determined based on samples obtained at the sampling locations shown on Attachment-C_D.						
p. 24, #D.1	V _i = total effluent flow to the LAA for calendar month i-in million gallons;						
p. 24, #E	E. Mainland Groundwater Limitations						
	Release of waste constituents from any portion of the WWTRF shall not-eause groundwater to: 1. Contain Result in a statistically significant increase in waste constituents in concentrations statistically greater than current groundwater quality or the Primary and Secondary MCLs identified in Title 22, whichever is greater.						
	2. Contain waste constituents identified in Title 22 in concentrations in excess of the Primary and Secondary MCLs.						
5	3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.						
	Compliance with these limitations shall be determined annually based on an intrawell temporal trend analysis using approved statistical methods. For any single well and constituent, an increase decrease in groundwater quality will constitute a violation of this Order if the concentration change is attributed solely to a release from the WWTRF.						
	The District is concerned with the Mainland Groundwater Limitations and how compliance will be determined; see additional information following this table in Section II.						

Page Number, Item Number	Edit Needed / Request for Modification					
p. 25	Compliance with these limitations shall be determined annually based on an intrawell temporal trend analysis using approved statistical methods. For any single well and waste constituent, an increase a decrease in groundwater quality will constitute a violation of this Order if the intrawell temporal trend for that constituent exhibits a statistically significant increasing trend, due to the discharge of waste.					
p. 26, #12	Space needed between "Specifications" and "F.10."					
p. 27, #H.4	Item #H.4 should be deleted or replaced with "The recycled water shall be at least undisinfected secondary recycled water as defined in Title 22, section 60301" to be consistent with the irrigation restrictions in item #H.5 and type of irrigation the District will be doing. Rationale for this request is provided following this table in Section II.					
p. 28, #7	Crops shall be grown on the use areas, and cropping activities shall be sufficient to take up all of the nitrogen applied, including any fertilizers, and manure, and biosolids.					
p. 28, #10	The volume of recycled water applied to the use areas on any single day shall not exceed reasonable agronomic rates based on the vegetation grown, pre-discharge soil moisture conditions, and weather conditions, with the exception of major irrigation events, which occurs after fields are initially planted.					
p. 30, #I	The District requests the Ultraviolet Disinfection Operating Specifications be removed from the WDRs. Rationale for this request is provided following this table in Section II.					
p. 31, #K	"Finding _" needs to be replaced with the finding number.					

Page Number,	Edit Needed / Request for Modification					
Item Number	-					
p. 35, #M.1	The District has not yet determined that it will abandon groundwater monitoring wells. Therefore, Provisions M.1.a and M.1.c need to be revised as follows:					
	a. By 1 May 2013, If any groundwater monitoring wells will be abandoned by the Discharger, then six months prior to abandonment the Discharger shall submit a Groundwater Monitoring Well Destruction Workplan. The workplan shall describe the proposed abandonment procedures, which shall comply with California Well Standards Bulletin 74-90 (June 1991); State of California Bulletin 94-81 (December 1981); and any more stringent standards adopted by the state or county pursuant to Water Code section 13801. The workplan shall specifically address the monitoring wells identified as planned for abandonment in Attachment B (specifically, wells MNLND-15 through MNLND-22 and MNLND-25 through MNLND-29). Any proposed changes to the list of wells to be abandoned shall be explained and justified.					
	c. By 1 September 2013, If the Discharger abandons any groundwater monitoring wells, then the Discharger shall submit a Groundwater Monitoring Well Destruction Report. The report shall detail the methods used to abandon each well and include copies of the well abandonment permits issued by the Contra Costa County Environmental Health Department. The report shall be submitted within six months of the wells being abandoned.					
p. 36, #d	The current NPDES permit for the WWTRF contains a requirement for preparing and submitting a pollution prevention plan (PPP) for salinity that must address the items contained in this provision. The PPP is to be completed and submitted within one year following completion of a Constituent Study, which was completed in November 2012. Because the Tentative WDRs duplicates the NPDES permit requirement for a salinity PPP, the District requests the Tentative WDRs provision be deleted, or modified as follows:					
	By 1 February 2015, the Discharger shall submit and implement a <i>Salinity Evaluation and Minimization Plan</i> to address the sources of salinity discharged to the wastewater treatment system. At a minimum, the plan shall meet the following requirements outlined in CWC Section 13263.3(d)(3): <u>The Discharger's NPDES permit for the WWTRF requires preparation of a salinity pollution prevention plan (PPP) in accordance with CWC Section 13263.3(d)(3). Completion and submittal of the NPDES permit-required salinity PPP shall be considered fulfillment of this provision.</u>					
p. 39, #13-15	Delete these sections in their entirety. The criteria for preparing an industrial pretreatment program are that a POTW has either a total design flow greater than 5 mgd or the POTW receives wastewater discharges from at least one Significant Industrial User (40 CFR 403.8). The WWTRF has a capacity less than 5 mgd and does not have any industrial users within its service area.					

Page Number, Item Number	Edit Needed / Request for Modification					
p. 41, #21	The District owns all the LAAs, thus this section is not applicable and should be deleted.					
	Monitoring and Reporting Program (MRP)					
p. 1	In the Influent Monitoring and Effluent Monitoring sections, the reference to Attachment C should be changed to Attachment \underline{D} .					
p. 1, Effluent Monitoring	Grab samples will be considered to be representative of the effluent.					
p. 2, Effluent Monitoring	For Total Coliform Organisms sampling frequency change Daily to 5 Days per Week. Rationale for these changes is provided following this table in Section II.					
p. 2, UV Disinfection System Monitoring	Consistent with our comment above and in Section II regarding the inclusion of U disinfection system operating specifications, the District should not have to report disinfection system parameters. There are no specific limitations for these parameters compliance with the total coliform limitations is used to evaluate the adequacy of disinfection system.					
p. 4	The current groundwater monitoring well network consists of MNLND-1, MNLND-2, MNLND-3, MNLND-5, MNLND-6, MNLND-7, and MNLND-14, MNLND-23, MNLND-24. Wells MNLND-23 and MNLND-24 are background wells and the remainder are compliance wells. Prior to					
p. 4, Mainland Groundwater Monitoring	The District requests the monitoring of "gradient" and "gradient direction" be removed from the MRP. The groundwater monitoring wells are located in close proximity and adjacent to storage ponds; thus, no gradient will be able to be established and reporting of data will not be worthwhile.					
p. 7, Monthly Monitoring Reports, #3	The District requests the following edit to this reporting requirement to correspond with our comment above and in Section II regarding effluent limitations for total coliform:					
	3. Calculated 7-day median results for eEffluent total coliform organisms (TCO) results.					
p. 7, Monthly Monitoring Reports, #12 The District suggests the following edit: "12. Copies of laboratory analogous report(s), if requested." This edit is consistent with item #6, which state laboratory reports need not be included, but must be provided upon requested requiring submittal of all laboratory reports for analyses completed with month will result in submittal of a substantial, and potentially burdenso information to the Central Valley Water Board, which may not be desired.						
p. 8, Quarterly Monitoring Reports, #3	Corresponding to our above comment regarding monitoring of the groundwater gradient, the District requests the following change to this section: 3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any.					

Page Number, Item Number	Edit Needed / Request for Modification					
Information Sheet						
p. 1, 2 nd para.	The storage ponds have a capacity of 285 350 acre-feet and					
p. 1, 3 rd para.	Completed expansions of the Jersey Island LAA were approved occurred in September 2003, September 2005, and July 2006.					
p. 1, 4 th para.	The Discharger constructed a new WWTP that began operation in July 2011 and became fully operational in October 2011.					
p. 1, last para.	Sludge was removedto the LAA is not feasible. Stored water in the North Pond is conveyed to the Jersey Island LAA via the Supply Pump Station.					
p. 2, 1 st para.	However, the increase in nitrate is associated with a significant decrease in TKN, which results in a total nitrogen concentration less than 10-15 mg/L. [see detailed comment below regarding the District's request to modify the total nitrogen efflue limitation.]					
p. 2, 1 st para.	When existing and new water softeners come online, the TDS concentration is expected to slightly increase.					
p. 2, 2 nd para.	The hydraulic capacity of the WWTRF is not limited by the constraints of <u>land</u> disposal					
p. 2, 3 rd para.	The Discharger states that metal concentrations are likely to <u>have</u> increased in the biosolids and decreased in the effluent as a result of changing to membrane filtration, which will make loading of metal constituents to the LAA more controllable.					
p. 2, last para.	The mainland area is approximately 165 acres and will be used to grow crops with water from natural precipitation					
p. 2, last para.	However, this Order requires to the Discharger					
p. 3, 3 rd para.	Local drainage is to the Sacramento San Joaquin Delta but the Discharger maintains all storm water onsite.					
p. 4, 2 nd para.	The current treatment system is designed to have a total nitrogen concentration less than 10-15 mg/L.					
p. 5, 2 nd para.	the destruction of abandoned wells on the mainland					
Commission of the Commission o	Attachments					
Attachment A	Locations of Supply Pump Station, Return Pump Station, and "I" Parcel need to be labeled per markup of figure provided as an attachment to these comments.					
Attachment B	"Monitoring wells to be abandoned" needs to be replaced with "Existing wells not required to be sampled." In addition, the arrow showing the shallow groundwater gradient needs to be deleted.					

II. Additional Information

WDRs p. 23, Total Coliform Limitations and MRP p. 2, Effluent Monitoring. The District applies recycled water to lands for the surface irrigation of fodder crops and only to lands that the District owns. Based on this, the Tentative WDRs find that the water recycling program is exempt from Title 22 requirements for uses of recycled water (see pp. 17-18) and prohibits animals used for producing milk for human consumption to graze on these crops (see p. 34). Thus, the WWTRF effluent does not need to meet 2.2 MPN/100 mL as a 7-day median, which is the Title 22 requirement for irrigation of food crops, parks and playgrounds, residential landscaping, and unrestricted access golf courses. Using Title 22 as a guide for the quality of recycled wastewater to apply to fodder crops and pasture for animals not producing milk for human consumption, the recycled water only needs to be "undisinfected secondary recycled water," which means "oxidized wastewater." The WWTRF produces tertiary treated wastewater, which provides a high quality recycled water for irrigation purposes and more than surpasses the minimum specification of Title 22 for fodder crop irrigation. However, establishing total coliform limitations as 2.2 MPN/100 mL as a 7-day median is overly restrictive and would unnecessarily put the District at risk of violation. Further, the NPDES section of the Central Valley Water Board is not allowing the District to discharge from the North Storage Pond to the San Joaquin River, thus, the pond is now used only for water that will be used for irrigation of LAA. Thus, the District requests the changes to the total coliform limitations noted in the above table.

The MRP contains the requirement to monitor total coliform daily. The District requests this monitoring frequency be reduced to <u>five</u> days per week to facilitate a more cost-efficient monitoring program for the District. The District feels this request is justified for the following reasons:

- 1. The WWTRF NPDES permit monitoring frequency for effluent total coliform is five days per week.
- 2. The WWTRF provides a consistent and high level of treatment with respect to total coliform (see Tentative WDRs p. 5, finding 23).
- 3. Other automated monitoring parameters designed to control treatment processes and detect potential release of inadequately treated or disinfected effluent provide redundant information to support the WWTRF operations and protection of water quality (e.g., automated process control variables, UV lamp operations, and effluent monitoring including pH, turbidity, and dissolved oxygen).

Having the District monitor coliform seven days per week will have a significant effect on our staffing and operational budget, as the WWTRF is currently staffed five days per week, not seven.

p. 24, Mainland Groundwater Limitations. Section E (Mainland Groundwater Limitations) specifies that WWTRF releases shall not cause groundwater to: (1) contain waste constituents in concentrations statistically greater than current groundwater quality; and, (2) contain Title 22 identified waste constituent concentrations in excess of the Primary and Secondary MCLs.

However, current groundwater quality can already exceed Primary and Secondary MCLs. For example, the concentration ranges for samples from MNLND-7 (compliance well) and MNLND-24 (background well) indicate MCLs have been exceeded for nitrogen species (NO3+NO2), TDS, Cl, and SO4. Furthermore, historical monitoring data showed that increasing TDS concentrations trends in water samples from background well MNLND-24, which is located upgradient of compliance well MNLND-7, were statistically significant ("*Background Groundwater Quality Study Report (Revised*)," Ironhouse Sanitary District, May 2005).

	Prima	ry MCLs	Secondary MCLs					
Automorphism (Control of Control	NO3+NO2 (10 mg/L)							- T
			TDS (700 mg/L)		Chloride (250 mg/L)		Sulfate (250 mg/L)	
	Max	Min	Max	Min	Max	Min	Max	Min
MNLND-7	8.9	1.1	4100	3300	560	360	1400	600
MNLND-								
24	11	0.5	1800	730	310	97	470	140

Filtered quarterly samples collected since July, 2010.

Bold numbers exceed MCL.

An intra-well approach is appropriate to analyze monitoring data for potential changes in concentration, concentration trend, or both. However, groundwater can already exceed water quality objectives and existing constituent concentrations can exhibit natural temporal trends. Accordingly, Section E should be revised as follows.

E. Mainland Groundwater Limitations

Release of waste constituents from any portion of the WWTRF shall not-cause groundwater to:

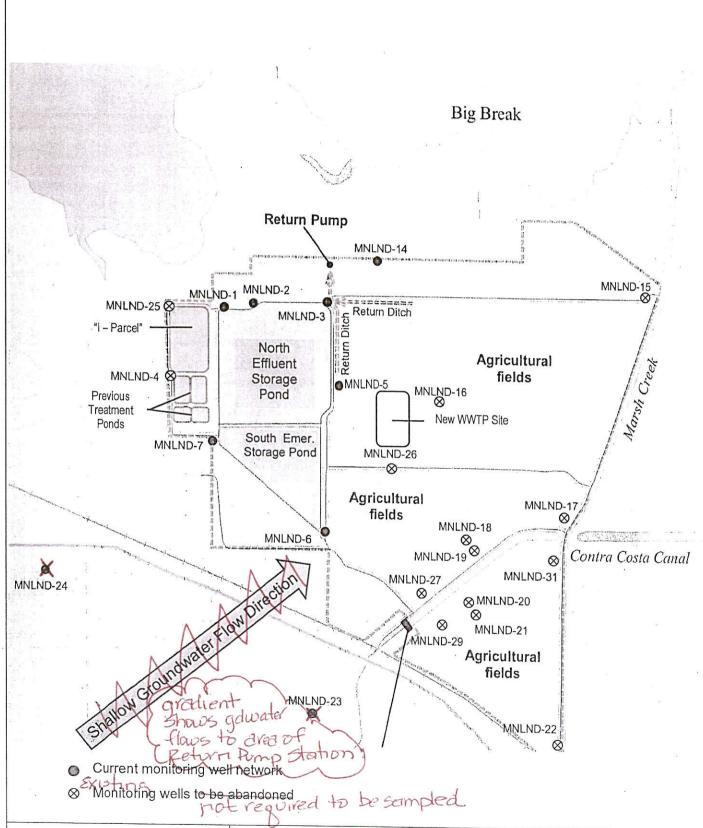
- 1. Contain Result in a statistically significant increase in waste constituents in concentrations statistically greater than current groundwater quality or the Primary and Secondary MCLs identified in Title 22, whichever is greater.
- 2. Contain waste constituents identified in Title 22 in concentrations in excess of the Primary and Secondary MCLs.
- 3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

Compliance with these limitations shall be determined annually based on an intrawell temporal trend analysis using approved statistical methods. For any single well and constituent, an increase decrease in groundwater quality will constitute a violation of this Order if the concentration change is attributed solely to a release from the WWTRF.

p. 27, Water Recycling Specifications, item #4. This item states: "The recycled water shall be at least disinfected tertiary 2.2 recycled water as defined in Title 22, section 60301." First, "disinfected tertiary 2.2 recycled water" is not a definition within Title 22, section 60301. Further, item #5 of the Tentative WDRs Water Recycling Specifications states: "Recycled water shall be used in compliance with Title 22, section 60304. Specifically, uses of recycled water

shall be limited to those set forth in Title 22, section 60304(d)." Section 60304(d) specifies the crops that can be irrigated with "undisinfected secondary recycled water," which includes fodder and fiber crops and pasture for animals not producing milk for human consumption – the type of irrigation the District plans to implement. Thus, item #4 in the Tentative WDRs requires a higher level of treatment of the recycled water than necessary for the type of irrigation allowed by the WDRs. Item #4 should be deleted or replaced with "The recycled water shall be at least undisinfected secondary recycled water as defined in Title 22, section 60301" to be consistent with the irrigation restrictions in item #5 and type of irrigation the District will be doing.

p. 30, I. Ultraviolet Disinfection System Operating Specifications. The specifications in this section are based on the National Water Research Institute's *Ultraviolet Disinfection Guidelines for Drinking Water and Reuse*. These guidelines are for disinfecting filtered reclaimed water to be essentially pathogen free (i.e., 5-log10 poliovirus inactivation and a 7-day median total coliform of 2.2 MPN/100 mL). These types of UV operating specifications are normally contained in permits regulating off-site reclamation. The District is not doing any off-site reclamation of its wastewater. Because the WWTRF effluent is restricted to application on District-owned lands, the water recycling program is exempt from the requirements of Title 22, which California Department of Public Health has confirmed (stated in Finding #74, WDRs p. 17). Further, the inclusion of the UV operating specifications are prescriptive and do not allow the District to operate the WWTRF in a manner necessary to meet the effluent limitations. Because the water recycling program is exempt from Title 22, and because the use of the recycled water is for fodder crops, inclusion of these UV operating specifications in the WDRs is unnecessary and the District requests they be removed.



DRAWING REFERENCE:

IRONHOUSE SD

RWD Addendum April 2012

MAINLAND FACILITIES SITE PLAN

IRONHOUSE SANITARY DISTRICT
IRONHOUSE WASTEWATER TREATMENT PLANT
CONTRA COSTA COUNTY